# SHRI VISHWAKARMA SKILL UNIVERSITY

(State University enacted under the Government of Haryana Act 25, 2016)
**DUDHOLA, PALWAL**

## B.Voc. (MLT) Honours with Research (4 Years)
## (3 years + 1 year extendable to 4th year research/program)
## Session: 2024-28

### Skill Department of Life Sciences & Healthcare

## Skill Faculty Applied Science and Humanities

## Semester I

| Category | Subject | Subject Code | Credit | | | Marks | | | | | | | Hours | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Theory | | | Practical | | | Total | | | |
| | | | Th | P/TU | To | I | E | To | I | E | To | | T | P | To |
| Major Course-1 | Human Anatomy and Physiology | 24UMLT01 | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 90 |
| | Human Anatomy and Physiology Lab | 24UMLT02 | | | | | | | | | | | | | |
| Major Course-2 (QP/NOS) | Introduction of Medical Laboratory | 24UMLT03 | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 90 |
| | Introduction of Medical Laboratory Lab | 24UMLT04 | | | | | | | | | | | | | |
| Major Course-3 (QP/NOS) | Phlebotomy & Ethics | 24UMLT05 | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 90 |
| | Phlebotomy & Ethics Lab | 24UMLT06 | | | | | | | | | | | | | |
| Multidisciplinary-1 | Psychology and Life | 24UPSY01 | 2 | 1 | 3 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 30 | 60 |
| Ability Enhancement Courses (AEC-1) | Human Values and Professional Ethics | 24UHPE01 | 2 | 0 | 2 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 0 | 30 |
| Value Added Courses (VAC-1) | Environmental Sciences | 24UEVS01 | 2 | 0 | 2 | 30 | 70 | 100 | 0 | 0 | 0 | 100 | 30 | 0 | 30 |
| **Total** | | | 12 | 7 | 19 | 120 | 280 | 400 | 140 | 60 | 200 | 600 | 180 | 210 | 390 |

## Semester II

| Category | Subject | Subject Code | Credit | | | Marks | | | | | | | Hours | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Theory | | | Practical | | | Total | | | |
| | | | Th | P/TU | To | I | E | To | I | E | To | | T | P | To |
| Major Course-4 | Clinical Hematology | 24UMLT07 | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 90 |
| | Clinical Hematology Lab | 24UMLT08 | | | | | | | | | | | | | |
| Major Course-5 (QP/NOS) | Medical Laboratory Procedure & Infection Control | 24UMLT09 | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 90 |
| | Medical Laboratory Procedure & Infection Control Lab | 24UMLT10 | | | | | | | | | | | | | |
| Multidisciplinary-2 | Indian Sociology | 24USOC05 | 2 | 1 | 3 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 30 | 60 |
| Ability Enhancement Courses (AEC-2) | English Language & Business Communications | 24UENG01 | 1 | 1 | 2 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 15 | 30 | 45 |
| | English Language & Business Communications Lab | 24UENG02 | | | | | | | | | | | | | |
| Value Added Courses (VAC-2) | Yoga and Health Skills – II | 24UYHS01 | 2 | 0 | 2 | 30 | 70 | 100 | 0 | 0 | 0 | 100 | 30 | 0 | 30 |
| Project | Project-1 (Minor) | 24UPRJ01 | 0 | 2 | 2 | 0 | 0 | 0 | 70 | 30 | 100 | 100 | 0 | 60 | 60 |
| Skill Enhancement Courses (SEC) | OJT-1 | 24UOJT01 | 0 | 4 | 4 | 0 | 0 | 0 | 70 | 30 | 100 | 100 | 0 | 120 | 120 |
| **Total** | | | 9 | 12 | 21 | 120 | 280 | 400 | 140 | 60 | 200 | 600 | 135 | 360 | 495 |

| Semester III | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Subjects** | **Credit** | | | **Marks** | | | | | | | **Hours** | | |
| | | | | **Theory** | | | **Practical** | | | **Total** | | | |
| | **Th** | **P** | **To** | **I** | **E** | **To** | **I** | **E** | **To** | | **T** | **P** | **To** |
| Major Course-6 (Basics of Microbiology ) | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 90 |
| Major Course-7 (QP/NOS) (Histopathology & Histo Technique ) | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 90 |
| Major Course-8 (QP/NOS) (Cytopathology & Cytotechnique ) | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 90 |
| Multidisciplinary-3 | 2 | 1 | 3 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 30 | 60 |
| AEC-3 | 2 | 0 | 2 | 30 | 70 | 100 | 0 | 0 | 0 | 100 | 30 | 0 | 30 |
| VAC-3 | 2 | 0 | 2 | 30 | 70 | 100 | 0 | 0 | 0 | 100 | 30 | 0 | 30 |
| Total | 12 | 7 | 19 | 120 | 280 | 400 | 140 | 60 | 200 | 600 | 180 | 210 | 390 |

| Semester IV | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Subjects** | **Credit** | | | **Marks** | | | | | | | **Hours** | | |
| | | | | **Theory** | | | **Practical** | | | **Total** | | | |
| | **Th** | **P** | **To** | **I** | **E** | **To** | **I** | **E** | **To** | | **T** | **P** | **To** |
| Major Course-9 (Clinical Biochemistry I) | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 90 |
| Major Course-10 (QP/NOS) (Advance Histo Technique & Quality control) | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 90 |
| Multidisciplinary-4 | 2 | 1 | 3 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 30 | 60 |
| AEC-4 | 2 | 0 | 2 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 0 | 30 |
| Internship-1 | 0 | 2 | 2 | 0 | 0 | 0 | 70 | 30 | 100 | 100 | 0 | 60 | 60 |
| Project-2 | 0 | 2 | 2 | 0 | 0 | 0 | 70 | 30 | 100 | 100 | 0 | 60 | 60 |
| OJT-2 | 0 | 4 | 4 | 0 | 0 | 0 | 70 | 30 | 100 | 100 | 0 | 120 | 120 |
| Total | 8 | 13 | 21 | 60 | 140 | 200 | 350 | 150 | 500 | 700 | 150 | 330 | 510 |

AEC: English Language and Communication Skills
Human Values and Professional Ethics
Employability Skills
Entrepreneurship Development

VAC: Yoga and Health Skills
Understanding India – Constitution
Environmental Sciences

**Semester V & VI**

| **Subjects** | **Credit** | | | **Marks** | | | | | | | **Hours** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | **Theory** | | | **Practical** | | | **Total** | | | |
| | **Th** | **P** | **To** | **I** | **E** | **To** | **I** | **E** | **To** | | **T** | **P** | **To** |
| Skill Enhancement Courses (SEC)-OJT /Project/Workshop | 0 | 20 | 20 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 0 | 600 | 600 |

| Semester VII | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Subjects** | **Credit** | | | **Marks** | | | | | | | **Hours** | | |
| | | | | **Theory** | | | **Practical** | | | **Total** | | | |
| | **Th** | **P** | **To** | **I** | **E** | **To** | **I** | **E** | **To** | | **T** | **P** | **To** |
| Major Course-11 (Transfusion Medicine & Blood Banking) | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 30 |
| Major Course-12 (Immunology & Serology) | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 30 |
| Major Course-13 (Research Methodology and Biostastics) | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 30 |
| Minor Course-1 (Clinical Biochemistry II) | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 30 |
| Minor Course-2 (Clinical Microbiology and Virology) | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 30 |
| Total | 10 | 10 | 20 | 75 | 175 | 250 | 175 | 75 | 250 | 500 | 150 | 300 | 450 |

| Semester VIII | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Subjects** | **Credit** | | | **Marks** | | | | | | | **Hours** | | |
| | | | | **Theory** | | | **Practical** | | | **Total** | | | |
| | **Th** | **P** | **To** | **I** | **E** | **To** | **I** | **E** | **To** | | **T** | **P** | **To** |
| Major Course-14 (Parasitology & Mycology ) | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 90 |
| Major Course-15 (Molecular Biology & Genetics) | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 90 |
| Minor Course-3 (Systemic Pathology) | 2 | 2 | 4 | 15 | 35 | 50 | 35 | 15 | 50 | 100 | 30 | 60 | 90 |
| Research Project/ Dissertation | 0 | 8 | 8 | 0 | 0 | 0 | 70 | 30 | 100 | 100 | 00 | 240 | 240 |
| Total | 6 | 14 | 20 | 45 | 105 | 150 | 175 | 75 | 250 | 400 | 90 | 420 | 510 |

- Balanced hours (for 1200 Hrs/Year) will be completed by assignment/self-learning/library/filed work etc.

**SUBJECT: ANATOMY & PHYSIOLOGY**

**SUBJECT CODE: 24UMLT01**

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**Objective:** The objective of this course is to give detailed knowledge of Human body structure & functioning of various systems, components, glands and their secretion of hormones.

**Course Outcome:** At the end of this course, the students will be able:

1. To demonstrate the anatomical structure of human body.
2. To illustrate the anatomical positions and terminology of the course.
3. To understand the basic knowledge of cells, tissues and blood.
4. To analyze the functioning of organs and organ systems in human body.

| Unit | Topic | Key Learning |
|---|---|---|
| 1 | Introduction to Physiology & Anatomy of the Human body | Composition of body (Cellular level and tissue level), Homeostasis, Basic anatomical terminology, anatomical position, anatomical planes |
| 2 | Musculoskeletal System, Nervous system and Cardiovascular system | Bones (Upper limbs & Lower limbs), Joints (Classification, structure and movements), Muscles (Types, structure and properties), Brief anatomy and physiology of Nervous system and Cardiovascular system |
| 3 | Systemic anatomy & Physiology | Brief anatomy and physiology of Respiratory System, Digestive System, Excretory System. |
| 4 | Blood & Lymphatic System, Reproductive System | Development, Composition and function of blood, Lymphatic tissue and organs (Types and functions), Brief anatomy and physiology of Reproductive System |
| 5 | Endocrine System | Different Glands, hormones and functions (Hypothalamus, Pituitary, Thyroid, Adrenal, Endocrine Pancreas and Parathyroid) |

**Text Books:**

1. Human Anatomy 5 (Vol) 6th edition 2001; B.D. Chaurasia, CBS Publishers & Distributors
2. Medical Physiology 4th edition, GK Pal.
3. Ross & Wilson Anatomy & Physiology in Health & Illness by Waugh
4. Text book of Medical Physiology by Guyton(AC)

**Reference Books:**

1. Human Anatomy 5 (Vol) 6th edition 2001; B.D. Chaurasia, CBS Publishers & Distributors
2. Human Anatomy 3 (Vol) 2nd edition -1999 by Inderbir Singh, Jaypee brothers Medical Publishers
3. Review of Medical Physiology by Ganong

**SUBJECT: ANATOMY & PHYSIOLOGY LAB**

**SUBJETC CODE: 24UMLT02**

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**Objective:**
The objective of this course is to impart knowledge of Anatomy & Physiology of Human body.

**Course Outcome:** After completion of the course student will be able:

1. To identify the anatomical structure of human body.
2. To understand the basic knowledge of cells, tissues and blood.
3. To determine the function of organ and organ system in human body.

**List of Practical:**

1. To demonstrate the skeleton system of human body.
2. To identify the skeleton - Articulated and disarticulated.
3. To determine the various Respiratory organs of human body.
4. To illustrate the various Excretory organs of human body.
5. To demonstrate the various Cardiovascular organs of human body.
6. To elaborate the various Digestive organs of human body
7. To perform and measure the blood pressure.
8. To recording and monitoring of pulses and body temperature

**Text Books**


1. Ross & Wilson Anatomy & Physiology in Health & Illness by Waugh
2. Text book of Medical Physiology by Guyton(AC)
3. Theory and Practice of Histological Techniques by Bancroft (JD)


**Reference Books:**


1. Practical Textbook B.D. Chaurasia Human Anatomy 6th edition 2001; CBS Publishers & Distributors
2. Practical Textbook of Anatomy by Inderbir Singh 2nd edition -1999 Jaypee brothers Medical Publishers.
3. Practical Textbook Medical Physiology 4th edition, GK Pal.
4. Anatomy and Physiology for Healthcare by Paul Marshall; Beverly Gallacher; Jim Jolly; Shupikai Rinomhota (EBSCO eBook) This book is unique in that it integrates clinical cases with the essential biological facts to provide all students with a thorough understanding of how anatomy and physiology can be applied in healthcare. ISBN: 9781904842958 Publication Date: 2017
5. Schaum's Outlines: Human Anatomy and Physiology by Kent Van de Graaff; R. Rhees; Sidney Palmer; R Ward Rhees; Sidney L. Palmer; Kent M. Van De Graaff.

**SUBJECT: INTRODUCTION OF MEDICAL LABORATORY**

**SUBJCET CODE: 24UMLT03**

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**Objective:** The objective of this course is to:

1. Familiarized student with foundational understanding of medical laboratory sciences, including terminology, principles, and basic techniques used in clinical diagnostics.
2. Enable learners, understand the significance of the pre-analytical phase in laboratory testing
3. Facilitate students gain knowledge about external services, including the selection and procurement of equipment and consumable supplies.
4. Educate the student about healthcare systems & safety protocols and procedures specific to working in a medical laboratory environment, emphasizing biohazard handling, infection control, and proper use of personal protective equipment (PPE).

**Course Outcomes:**

After completing this course, the student will be able to:

1. Understand the role of a medical laboratory professional in the healthcare system, and the scope, purpose and career opportunities in the field of medical laboratory science.
2. Exhibit basic knowledge of patient preparation for the specimen collection and selection of various sites for drawing blood sample.
3. Follow medical laboratory etiquettes and external services.
4. Implement biosafety guidelines and standardize protocols to avoid mis-happenings.
5. Understand the healthcare delivery system in India.

| Unit | Topic | Key Learning |
|---|---|---|
| 1 | Introduction to medical laboratory | Introduction to Medical laboratory, definition of a pathologist, technician, technologists, layout plan & design, infrastructure, environmental condition, basic sensitization to hematology, clinical pathology, clinical biochemistry, clinical microbiology, histopathology and cytology.<br>Job description, evaluation & performance-personnel, qualification, induction training, education continual improvement, performance and review, understand patient's rights & responsibilities in healthcare, Introduction to healthcare related Medical Terminology |
| 2 | Pre-analytical procedures | Procedure for patient booking, patient preparation and proper site selection for venipuncture, Needle insertion technique, order of draw, Tube filling, needle removal and sharp disposal, verbal request for add on tests |
| 3 | Assist of patient and procedures | Patient instructions for specimen collection (sputum, semen, urine & stool)<br>Understand filling of different types test request forms, method of assisting the patient before, and during collection of the blood specimen. |
| 4 | Laboratory etiquettes and external services | Understand need for compliance of organizational hierarchy and reporting Understand the legal and ethical issues. Understanding importance of records, documentation & reports. External services & Supplies-Selection of purchase, equipment & consumable supplies, Document policy & procedures |
| 5 | Biosafety level and healthcare delivery system | Biosafety: its various levels and importance in a medical laboratory. Standardized protocols to avoid near miss or sentinel events. Healthcare delivery system in India at primary, secondary and tertiary care, community participation in healthcare delivery system, issues in health care delivery system in India |

**Text Books:**

1. Textbook of Medical Laboratory Technology by Praful B Godkar; Bhalani Publishing House, Mumbai.
2. An Introduction to Medical Laboratory Technology by FJ Baker; Butterworth Heinmann, Oxford
3. Medical Laboratory Manual for Tropical Countries by Monica Cheesbrough; Cambridge University Press, UK
4. Medical Laboratory Science Theory and Practical by J Ochei and A Kolhatkar, Tata McGraw Hill Publishing Company Ltd., New Delhi 2000 Ed.
5. Medical Laboratory Technology by Satish Gupte, JP Publishers
6. Clinical Laboratory Science: The Basics and Routine Techniques" by Jean Jorgenson Linné and Karen Munson Ringsrud
7. Laboratory Management by Puthwilliams

**Reference Books:**
Laboratory medicine specialist will be invited to deliver lecture on specific topics and impart their experiences.

1. Clinical Laboratory Science Review by Robert R. Harr, ASCP Press
2. Clinical Laboratory Science: The Basics and Routine Techniques by Jean J. Schiemann, Delmar Cengage Learning
3. Clinical Laboratory Science: Strategies for Practice by Mary Louise Turgeon, Pearson Education
4. Medical Laboratories Management- Cost effective methods by Sangeeta Sharma, Rachna

**SUBJECT: INTRODUCTION OF MEDICAL LABORATORY -LAB**

**SUBJCET CODE: 24UMLT04**

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**Objective:** The objective of this course is to:

1. To ensure that the laboratory environment is clean, organized, and free from contaminants, additionally, maintaining an equipment log book.
2. To optimize the use of space, enhance workflow efficiency, and ensure the safety of personnel by designing a functional and ergonomic laboratory layout.
3. To familiarize students with the different types of laboratory apparatus.
4. To expose students to the latest advancements in laboratory and hospital setups, including the use of modern technology, equipment, and protocols, preparing them for real-world applications.
5. To demonstrate the principles and techniques of using various equipment in medical laboratory.

**Course Outcomes:**

1. To understand the importance of cleanliness, hygiene and maintain log book in a lab setting.
2. Learner will develop to think critically about space utilization, equipment placement, and the functionality of a laboratory.
3. Students will become familiar with the various types of glassware, apparatus, and plastic ware.
4. The various lab visits allow students to compare and contrast different lab setups, equipment, and methodologies used in various labs.
5. Understanding how modern laboratory practices are applied in real-world hospital settings, bridging the gap between academic learning and professional application.
6. Video and visual demonstration reinforces learning by allowing students to visually observe, demonstrate and replicate proper techniques in a controlled manner.
7. Students will learn the principles behind the separation of serum and plasma using a centrifuge, a fundamental technique in clinical and research laboratories.

**Practical/Laboratory Content:**

1. Preparation and implementation of cleaning of lab and maintain equipment's log book.
2. Planning and making layout/design for each laboratory
3. To demonstrate glass wares, apparatus and plastic wares used in laboratory
4. Visit to each lab in the Department
5. Modern Laboratory set up and hospital setup.
6. Making inventory for each lab
7. Video demonstration for specimen collection
8. To separate serum and plasma by centrifuge method.

**Text Books:**


1. Textbook of Medical Laboratory Technology by Praful B Godkar; Bhalani Publishing House, Mumbai
2. Introduction to Medical Lab Technology by F.J. Baker & R.E. Silverton, ISBN NO. 13, edition 7th, Publisher Hodder Arnold
3. Medical Laboratories Management- Cost effective methods by Sangeeta Sharma, Rachna, ISBN 13, Latest edition, Publisher Viva books.
4. Medical Laboratory Science: Theory And Practice by J Ochei and A Kolhatkar , Latest edition, ISBN 13, Publisher McGraw Hill Education
5. NABL Guidelines
6. ISO15189:2022


**Reference Books:**


1. Laboratory Design Guide by J. E. M. Heikens, J. R. H. Schenk, and M. K. J. E. de Waal, Wiley
2. Laboratory Management: Principles and Processes by J. Michael Miller and J. L. Andrews, CRC Press.
3. Laboratory Inventory Management by Robert J. Ainsworth, Elsevier

**SUBJECT: PHLEBOTOMY & ETHICS**

**SUBJECT CODE: 24UMLT05**

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**Objective:** The objective of this course is:

1. To Understand the specimen collection for Medical laboratory analysis.
2. To enhance the ability of analytical methods in the Diagnostics sector. Hence collecting a specific specimen for a given analysis needs special attention to obtain satisfactory results.
3. To develop complete details of specific requirements for every analysis pertaining to every branch of Medical Laboratory Science.
4. To impart the knowledge of medico legal aspects and maintain of medical records as per medical ethics guidelines.

**Course Outcome:**

At the end of the course student will be able to:

1. Identify the major blood vessels of hand.
2. Perform the various procedure of blood collection.
3. Demonstrate the various instruments used for blood collection.
4. Understand the different types of Malpractice and negligence in medical laboratory practice.
5. Students will be familiarized with the ethics in the profession of medical laboratory science

| Unit | Topic | Key Learning |
|---|---|---|
| 1 | Blood Collection | Requirement and methods of collection, transport, preservation, and processing of various clinical Specimens, Blood collection for hematological investigations, Venipuncture, Capillary blood, Arterial blood, Precautions during collection, Vacutainer tubes, its type and uses, sample acceptance and rejection criteria. |
| 2 | Anticoagulants | Preparation of anticoagulants EDTA, Sodium citrate, Sodium fluoride etc. Definition and various types of anticoagulants along with their mode of action and uses in various investigations. |
| 3 | Quality assurance | Introduction of quality assurance , quality control system and internal and external quality control, Introduction and importance of calibration and validation of clinical laboratory instrument. |
| 4 | Medical ethics | Basic principles of medical ethics - Confidentiality, Medical ethics - Definition - Goal - Scope. Introduction to Code of conduct, Autonomy and informed consent - Right of patients, Care of the terminally ill- Euthanasia ,Organ transplantation. |
| 5 | Medico legal aspects of medical records | Introduction to basics of good laboratory practice, Medico legal case and type with Case studies, Confidentiality Privilege Communication Release of medical information, Ethics in the profession of Medical Laboratory Science, the sexual harassment of women at work place (Prevention, Prohibition and Redressed) POSH Act. |

**Text Books:**


1. Medical Laboratory Technology Vol. 1 by KL Mukherjee; Tata McGraw Hill Publishers, New Delhi
2. An Introduction to Medical Laboratory Technology by FJ Baker; Butterworth Heinmann, Oxford
3. Medical Laboratory Manual for Tropical Countries by Monica Cheesbrough; Cambridge University Press, UK
4. Textbook of Medical Laboratory Technology by Praful B Godkar; Bhalani Publishing House, Mumbai
5. Textbook of Medical Laboratory Technology by Praful B Godkar; Bhalani Publishing House, Mumbai

**Reference Books:**


1. Practical Haematology by JV Decei; ELBS with Curchill Living Stone; UK
2. Medical Laboratory Science Theory and Practical by J Ochei and A Kolhatkar, Tata McGraw Hill Publishing
   Company Ltd., New Delhi 2000 Ed.
3. Medical Lab. Technology by Satish Gupte, JP Publishers
4. Laboratory Management by Puthwilliams.
5. Phlebotomy Handbook: Blood Specimen Collection from Basic to Advanced Diana Garza (Author), Kathleen Becan-McBride EdD MLS (ASCP) CM (Author)

**SUBJECT: PHLEBOTOMY & ETHICS LAB**
**SUBJECT CODE: 24UMLT06**

**Objective:**

1. To Understand the specimen collection for Medical laboratory analysis.
2. To be enhance the ability of analytical methods in the Diagnostics sector. Hence collecting a specific specimen for a given analysis needs special attention to obtain satisfactory results.
3. To be develop complete details of specific requirements for every analysis pertaining to every branch of Medical Laboratory Science.
4. To impart the knowledge of medico legal aspects and maintain of medical records as per medical ethics guidelines.

**Course Outcomes:** At the end of the course student will be able:

1. To identify the major blood vessels of hand.
2. To perform the various procedure of blood collection.
3. To demonstrate the various instruments used for blood collection.
4. Understand the different types of Malpractice and negligence in medical laboratory practice.
5. Students will be familiarized with the ethics in the profession of medical laboratory science

**List of Practical:**

1. Collection of venous and capillary blood
2. Procedure of urine collection (routine and timed sample)
3. Procedure of stool collection
4. Procedure of swabs from various sites
5. To prepare of various anticoagulants used for blood collection & transportation
6. Preparation of various Disinfectants.
7. Demonstration of various Safety precautions to be taken in different laboratories
8. To demonstrate of patient consent form

**Text Books:**

1. Medical Law and Ethics by Bonnie F Freemen
2. Medical Law and Ethics by Herring
3. Phlebotomy Handbook: Blood Specimen Collection from Basic to Advanced Diana Garza (Author), Kathleen Becan-McBride EdD, MLS (ASCP) CM (Author).

**Reference Books:**

Medico legal Experts should be invited to deliver lecture on specific topics and share their experiences.

Case discussions, Group discussion

1. Medical Laboratories Management- Cost effective methods by Sangeeta Sharma, Rachna Agarwal, Sujata Chaturvedi and Rajiv Thakur
2. ICMR guidelines on Medical ethics

**SUBJECT: PSYCHOLOGY AND LIFE**

**SUBJECT CODE: 24UPSY01**

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**Objective:**

1. To develop appreciation about human behavior and human mind in the context of learners' immediate society and environment.
2. To develop in learners an appreciation of multidisciplinary nature of psychological knowledge and its applications in various aspects of life.
3. To enable learners to become perceptive, socially aware and self-reflective.
4. To facilitate students' quest for personal growth and effectiveness, and to enable them to become responsive and responsible citizens.
5. To develop in learners, the understanding of abnormal behavior, myths, symptoms and treatment of psychological disorders.

**Course Outcomes:**

1. Understand how psychological theories and principles relate to everyday life and apply knowledge of Behavior modification and life skill training to solve everyday problems.
2. Students are exposed to the elementary scientific research methods, techniques, counselling skills, ethics and evaluating skills of Psychology.
3. Apply psychological principles to understand personal as well as social issues and problems.
4. This course will impart in students an appreciation of the complex issues surrounding abnormal behavior both as experts and novices think about it.
5. Students would be able to diagnose a disorder, prescribe a treatment, and make a prognosis. They would also get an insight into the skills which are required by a psychologist.
6. The type of knowledge this course imparts is precisely the type used by professional practitioners.
7. Students can review current research findings and trends relative to the development and description of maladaptive

| Unit | Topic | Key Learning |
|---|---|---|
| 1 | An Introduction to Psychology | Meaning, Branches of Psychology; Myths and Misconceptions of Psychology; Role of a Psychologist |
| | Self-Concept | Nature, Self-discrepancies, factors shaping the self-concept. Self Esteem: Nature, development and importance. |
| 2 | Verbal non-Verbal Communication | General principles, Significance of communication. |
| | Attitude, Prejudice and Stereotypes | Nature, Characteristics, Formation and Change |
| 3 | Gender and Behavior | Gender stereotypes, gender and similarities and differences, personality traits and social behavior |
| | States of Mind | Nature of consciousness; changes in consciousness- sleep-wake schedules. Extended states of Consciousness: Hypnosis, Meditation and Hallucinations |
| 4 | Abnormal behavior | Myths and realities, causes of abnormality |
| | Anxiety, Personality and Mood Disorders | Nature, Characteristics, symptoms and Treatment of Disorders. |

**Text Books & References Books:**


1. Atwater, E (1995) Psychology For Living: Adjustment, Growth And Behaviour, New Delhi : Parentie Hall of India Ltd.
2. Weiten Wayne & Lloyd Margaret A. (1997), Psychology Applied to Modern Life : Adjustment in the 90s (5th edn.) pp. 225-226, Books/Cole Publishing Company, USA.
3. WeyneWeiten and Margaret A.Lloyd, "Psychology Applied to Modern LifeAdjustment in the 21st Century". 7th Edition, Thomson Wadsworth. Robert.S.Feldman, "Understanding Psychology",6th edition.
4. WeyneWeiten and Margaret A.Lloyd, "Psychology Applied to Modern Life- Adjustment in the 21st Century". 7th Edition, Thomson Wadsworth.
5. Robert.S.Feldman, "Understanding Psychology",6th edition.
6. Atkinson and Atkinson, "Introduction to Psychology

**Human Values and Professional Ethics**

**Course Credit: 02(0-1-0)**

**Course Code: 24UHPE01** **Max. Marks: 100(30I+70E)**

**Objectives:** The course aims to inculcate core human values and professional ethics in the learners to guide them in developing a strong sense of ethics and values that can help them navigate their chosen profession with integrity and responsibility.

**Learning Outcomes:** After completing this course, the learns will be able to

- Understand of Human values to interact and connect with the outer world in a peaceful manner (Yama).
- To exhibit Professional Ethics at working place.
- Ability to work in team with human values and professional ethics.
- Appreciate the essential complementarity between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity.

- **UNIT I**
- **Human Values-1:** Values: Understanding values, Types of values, Role of tracking values for individual & social wellbeing.
- Integrity, Trustworthiness, Honesty, Courage, Love and Compassion, non-violence, Renunciation, Righteousness
- Co-operation: -Understanding cooperation and significance of cooperation, Team work, Cohesion of Self-Family-Society.

- **UNIT II**
- **Human Values-2:** Empathy, Emotional Intelligence– Emotional Competencies – Conscientiousness.
- Self-confidence, Spirituality, Character.
- Truthfulness: Understanding truthfulness, need for truthfulness and role of truthfulness in relationship and social interaction.
- Customs and Traditions -Value Education – Human Dignity – Human Rights – Fundamental Duties.
- **UNIT III**
- **Professional Ethics aiming at excellence and Harmony:** Value Based Life and Profession, Professional Ethics and Right Understanding, Competence in Professional Ethics, Issues in Professional Ethics.
- Integrity, Trusteeship, Harmony, Accountability, Inclusiveness, Commitment, Respectfulness, Belongingness, Sustainability

- **UNIT IV**

**Professional Ethics: Global Prospective:**

- Globalization and MNCs –Cross Culture Issues,
- Business Ethics, Media Ethics, Environmental Ethics, Bio Ethics, Computer Ethics, War Ethics

- **UNIT V**

**Duties and Rights in Profession:**

- Concept of Duty, Professional Duties, Consensus and Controversy
- Professional and Individual Right,
- Conflict of Interest-Ethical egoism,
- Gifts and Bribes, Plagiarism

**Recommended Readings:**


1. Alavudeen, A, R. Kalil Rahman, and M. Jayakumaran. *Professional Ethics and Human Values.* Laxmi Publications, 2015.
2. Banerjee, B P. *Foundation of Ethics and Management*. Excel Books, 2005.
3. Gaur, R, R, R. Sangal, and G.P. Bagaria. *A Foundation Course in Human Values and Professional Ethics.* Excel Books, 2010.
4. Hugman, Richard. *New Approaches in Ethics for the Caring Professions: Taking Account of Change for Caring Professions.* Red Globe Press, 2005.
5. Hugman, Richard, and Carter Jan. *Rethinking Values and Ethics in Social Work*. Ney York: Red Globe Press, 2017.
6. Titus, Smith and Nolan. *Living Issues in Philosophy*. Oxford University Press, 1995.

**SUBJECT: ENVIRONMENTAL SCIENCE**

**SUBJECT CODE: 24UEVS01**

| | | | | | |
|---|---|---|---|---|---|
| Specialization | Value Added Course/ Audit Course | Structure (LTP) | 2 | 0 | 0 |
| Offered for | UG | Status | Core √ | Elective | |
| Faculty | SFASH | Type | New √ | Modification | |
| Credits | 2 | Marks | Internal | 30 | |
| Hours | 30 | | External | 70 | |
| Pre-requisite | Nil | To take effect from | 2024-2025 | | |
| Submissiondate | 13-07-2024 | Date of approval by BoS | 23-07-2024 | | |
| Course Objective | To develop foundation on principles of environmental studies and concept of structure and function of different compartments of the environment. | | | | |
| Course Outcome | **On completion of this course, students will be able to:**<br>**CO1**: Understand the fundamentals of environmental studies.<br>**CO2:** Comprehend ecosystems and their dynamics.<br>**CO3:** Implement corrective measures for the abatement of pollution.<br>**CO4**: Understand the waste management techniques.<br>**CO5:** Grasp environmental policies, legislation, and issues. | | | | |
| Contents of the course | **Unit:1 Indian Knowledge System- Indigenous Practices, Air & Environment**<br>Environment: Nature, Scope and Importance, Need for Public Awareness. Renewable and Non-Renewable Resources, Atmosphere: Introduction, layers of the atmosphere, Traditional agricultural practices - Organic farming, Crop rotation, Intercropping), Water management techniques - Stepwells, Tankas, Baolis, Forest management and conservation methods - Sacred groves, Agroforestry<br>**Unit:2 Ecosystems**<br>Concept, Structure and Function of an Ecosystem, Energy Flow in the Ecosystem, Bio-geochemical Cycles, Types of Ecosystem: Forest Ecosystem, Grassland Ecosystem, Desert ecosystem, Aquatic Ecosystems.<br>**Unit-3: Environmental Pollution**<br>Environmental Pollution: Definition, Causes, Effects and Control Measures, Different Types of Pollutions, Air Pollution, Water Pollution, Soil Pollution, Marine Pollution, Noise Pollution, Thermal Pollution, Environmental issues: Climate change, global warming, acid rain, ozone layer depletion<br>**Unit-4: Waste Management, Environmental policies and legislation**<br>Solid waste management Municipal solid waste management techniques: Bio Composting, Vermicomposting, Incineration, Landfill sites, Liquid waste management: Waste water and Standards for its discharge given by CPCB, Waste water treatment: Effluent Treatment Plant and Sewage treatment plant (STP), Wildlife Protection Act 1972, Forest Conservation Act 1980, Water (Prevention and control of Pollution) Act 1974, Air (Prevention and Control of Pollution) Act, 1981, Environment Protection Act, 1986 | | | | |
| Field Work | • Visit to a local area to document environmental assets river/forest/grassland/hill/mountain<br>• Visit to a local polluted Site-Urban/Rural/Industrial/Agricultural<br>• Participation in plantation drive and nature camps.<br>• Campus environmental management activities such as solid waste disposal, water Management and sanitation, and sewage treatment. | | | | |

| | |
|---|---|
| Text Books | 1. Singh, J.S., Singh, S.P. & Gupta, S.R. (2006). Ecology, Environment and Resource Conservation. Anamaya Publications.<br>2. Odum, E.P., Odum, H.T. & Andrews, J. (1971). Fundamentals of Ecology. Philadelphia: Saunders.<br>3. Gilbert M. Masters and W. P. (2008). An Introduction to Environmental Engineering and Science, Ela Publisher (Pearson). |
| References | 1. Deevedi M. (2021). Environment and ecology in the Indian knowledge system. Vidyanidhi prakashan.<br>2. Melissa K. Nelson and Daniel Shilling. (2018). Traditional Ecological Knowledge: Learning from Indigenous Practices for Environmental Sustainability. Cambridge University Press.<br>3. Krishnamurthy, K.V. (2003) Textbook of Biodiversity, Science Publishers, Plymouth, UK.<br>4. Manahan, S.E. (2022). Environmental Chemistry (11th ed.). CRC Press.<br>5. Central Pollution Control Board Web page for various pollution standards. https://cpcb.nic.in/standards<br>6. Ahluwalia, V. K. (2015). *Environmental Pollution, and Health*. The Energy and Resources Institute (TERI). |

**SUBJECT: CLINICAL HEMATOLOGY**

**SUBJCET CODE: 24UMLT07**

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**Objective:** The objective of this course is to:

1. Identify the primary functions of blood, its fluid and cellular components and its physical characteristics.
2. To understand the formation of the formed element components of blood.
3. Understand red cell disorders, mechanism.
4. Illustrate both established information and recent clinical advances in hematological disorders.
5. Elaborate blood and morphology with hematopathology.
6. Ensures patients receive with the most effective and efficient care when and where it is needed.

**Course Outcome:**

At the end of the course student will be able to:

1. Collect, process and preserve the blood samples
2. Understand the importance of timely delivery of a fair and satisfactory lab report
3. Perform the requisite skill to perform tests analysis in a health camp setting
4. Demonstrate the skill of counting various cells under a microscope
5. Perform routine investigations in clinical hematology laboratory

| Unit | Topic | Key Learning |
|---|---|---|
| I | Introduction | Introduction to Hematology, Laboratory Safety guidelines, Important equipment used in hematology lab, Quality assurance, Internal & External quality control, standard deviation coeefient accuracy, accuracy and precisions. |
| II | Development of blood Cells | Mechanism of hemopoietin, stages of cell development Erythropoiesis, Leucopoiesis, Thrombopoiesis, sites of hemopoiesis, , , Blood and its composition, Anticoagulants, mechanism of action, types and uses, effect |
| III | Hemoglobin & Anemia | Hemoglobin structure, types and function Hemoglobin estimation by various methods, physiological and pathological variations, abnormal hemoglobin including spectroscopy. HB electrophoresis. anemia – definition etiology classification and laboratory diagnosis. Sickle cell preparation. Hematocrit and red cell indices. |
| IIV | Leukemia's & Estimation of Blood cells | Leukemia's – definition, causes, classification, detection of leukemia. Total leucocyte counts in leukemia's. Multiple myeloma. Determination of ESR, RBC count, WBC count, Platelets count, absolute eosinophil count, reticulocyte count, principle, procedure, calculation, significance, precautions involved during counting, DLC count. Physiological and pathological changes in values. |
| V | Smear preparation | Preparation of thin and thick smears, staining of smears, Romansky dyes, preparation and staining procedures of blood smears, Morphology of normal blood cells and their identifications, differential leucocytes count by manual and automated method, and pathological variations in value. |

**Text Books:**

1. Textbook of Medical Laboratory Technology by Godkar, Publisher: Bhalani.
2. Essentials of Hematology by Haufbrand .
3. Practical's in Hematology by J.V. Dacie

**Reference Books:**

1. Textbook of Medical Laboratory Technology by Godkar, Publisher: Bhalani.
2. Medical Laboratory Technology by Lynch.
3. Wintrobe's clinical Hematology
4. Medical Laboratory Science: Theory And Practice by J Ochei and A Kolhatkar , Latest edition, ISBN 13, Publisher McGraw Hill Education

**SUBJECT: CLINICAL HEMATOLOGY LAB**

**SUBJCET CODE: 24UMLT08**

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**Objective:**

1. To understand microscope, its parts and utilization in the medical laboratory diagnosis.
2. To be enhance the ability of analytical methods in the hematological estimation.
3. To be develop complete details of specific requirements for every analysis pertaining to hematology
4. To impart the knowledge of hematological diseases.

**Course Outcomes:**

At the end of the course student will be able to:

1. Identify the major blood comments through various investigation methods.
2. Perform the hemoglobin and other hematological test.
3. Demonstrate the various instruments used in the hematology lab.
4. Impart the knowledge of hematological diseases.

**List of Practical**

1. Hematological tests are used to detect and diagnose the disease such as anemia, leukemia, sickle-cell anemia.
2. Also to determine several infections.
3. Demonstration of Microscope, parts and handling
4. Determination of Hemoglobin by various methods
5. Determination of TLC, DLC and AEC count
6. Preparation of thick and thin smear
7. Determination of Total RBC count
8. Determination of total platelet count
9. Determination of ESR by various methods
10. Blood grouping (slide / tube method)

**Text Books:**

1. Textbook of Medical Laboratory Technology by Godkar, Publisher: Bhalani.
2. Essentials of Hematology by Haufbrand .
3. Practicals in Hematology by J.V. Dacie

**Reference Books:**

1. Textbook of Medical Laboratory Technology by Godkar, Publisher: Bhalani.
2. Medical Laboratory Technology by Lynch.
3. Wintrobe’s clinical Hematology
4. Medical Laboratory Science: Theory And Practice by J Ochei and A Kolhatkar , Latest edition, ISBN 13, Publisher McGraw Hill Education

**SUBJECT: MEDICAL LABORATORY PROCEDURE & INFECTION CONTROL**

**SUBJCET CODE: 24UMLT09**

**Objective**:

1. To implement measures to prevent the spread of infections within healthcare settings**.**
2. Properly categorize and safely dispose biomedical waste to prevent contamination.
3. To develop hand hygiene and personnel safety.
4. To ensure that patients and the environment are clean to reduce the risk of infection and contamination.
5. Provide immediate care to patients in case of injury or medical emergencies before professional medical help is available.
6. Identify and mitigate factors that could interfere with test results after analysis

**Course Outcomes:**

At the end of the course student should be able to:

1. Understand the concept of infection control and prevention
2. Be mindful around personnel hygiene
3. Understand the biomedical waste management in collection and testing facility.
4. Know the strategy included within the quality advancement in collection and testing facility.
5. Work on records, documentation of lab manuals and results.

| Unit | Topic | Key Learning |
|---|---|---|
| I | Infection control and prevention | Understand infection, hospital borne infections, prevention and treatment of needle stick injury<br>Spillage-Spillage protocol major and minor, what do's and don'ts in in sample collection |
| II | Biomedical waste management | Introduction to biomedical waste, types of bio medical waste, BMW handling, collection, and segregation (as per colour coding)<br>BMW management & methods of disinfection |
| III | Personnel hygiene | To develop understanding of hand hygiene, techniques of grooming, use of PPE, Vaccinated against common infectious diseases, personal safety chart Biosafety act, HIV pre and post exposure guidelines, Hepatitis B& C pre and post exposure guidelines. |
| IV | Patient Hygiene | Importance and methodology of cleanliness, and hygiene environment in collection space, first aid, safety guideline and protocols |
| V | Specimen retention | Storage and retrieval of specimen, specimen's disposal. Source of post analytical error, interference and corrective action & preventive action |

**Text Book:**


1. Principles of Infection Control" by Steve L. Hays and Anne M. Wright., Publisher: Mosby
2. Specimen Collection and Handling: A Comprehensive Guide" by Daniel M. Tuttle, Publisher: Wiley-Blackwell
3. Lewis SM 2001 Collection and handling of blood. In: Dacie and Lewis Practical Haematology, 12th Edition edited by S.M. Lewis, B. J. Bain and I Bates Churchill Livingstone, London.
4. The guidelines biomedical waste management rules 2018


**Reference Book:**


1. Practical Guide to Infection Control in Healthcare Settings" by Laura L. Davis and Karen S. R. Harper, Wiley-Blackwell.
2. Biomedical Waste Management: Principles and Practice" by B. A. G. Narayan, Jaypee Brothers Medical Publishers
3. Biomedical Waste Management: Guidelines for Developing Countries" by World Health Organization, (WHO).
4. Practical Guide to Infection Control in Healthcare Settings" by Laura L. Davis and Karen S. R. Harper, Wiley-Blackwell.
5. Laboratory Medicine: Principles and Procedures" by M. A. Laposata, McGraw-Hill Education.

**SUBJECT: MEDICAL LABORATORY PROCEDURE & INFECTION CONTROL**

**SUBJCET CODE: 24UMLT10**

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**Objective:**

1. Understand and apply the color coding system for different types of biomedical waste.
2. Learn and practice the correct sequence for donning PPE to maximize protection and safety.
3. To ensure consistency and reliability in laboratory results.
4. Understand and apply effective disinfection methods to maintain a sterile environment.
5. Learn and practice safe disposal techniques for sharp materials (e.g., needles, blades) to prevent injuries and infections.
6. To Learn and practice effective hand hygiene techniques to prevent the spread of infections.

**Course Outcomes:**

1. Ability to categorize biomedical waste accurately using color-coded systems.
2. Demonstrate proper sequence and technique for donning PPE and apply methods for calibrating and standardizing glassware.
3. Effectively package and label laboratory waste according to established protocols, enhancing safety and facilitating proper disposal.
4. Apply appropriate disinfection methods to maintain a sterile environment and prevent contamination.
5. Accurately record and manage waste disposal data to comply with regulatory requirements and support environmental sustainability.
6. Perform hand hygiene procedures correctly to prevent the spread of infections and maintain a sterile working environment

**Practical/Laboratory Content:**

Whenever testing facility experiments are not possible, the principles and concepts can be demonstrated through any other material or mode including videos/virtual etc.,

1. Segregation of various biomedical waste according to color Code.
2. Sequence for putting on personal protective equipment.
3. Standardization of various glassware in the laboratory.
4. Proper waste packaging and labeling.
5. Demonstrate and practice disinfection techniques.
6. Proper disposal of sharp materials.
7. Maintain accurate waste disposal records
8. Demonstrate hand hygiene steps

**Text Book:**

1. Medical laboratories management- cost effective methods by Sangeeta Sharma, Rachna Agarwal, Sujata Chaturvedi and Rajiv Thakur, ISBN: 9789386105417, Publisher: Viva Books original, year: 2018
2. Laboratory management by Puthwilliams, ISO 15189:2012
3. Medical laboratory manual for tropical countries by Monica cheesbrough; Cambridge University press, UK
4. Laboratory quality management system, WHO 2011
5. Bio-Medical waste management (amendment) rules 2018.

**Reference Book:**

1. Biomedical Waste Management: Principles and Practices by A. R. K. Rao (Publisher: Springer)
2. Disinfection, Sterilization, and Preservation by Seymour S. Block (Publisher: Lippincott Williams & Wilkins)
3. Hand Hygiene: A Handbook for the Health Care Worker by R. M. Pittet (Publisher: World Health Organization)

**SUBJECT: INDIAN SOCIOLOGY**

**CODE: 24USOC05**

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**Objective:** This course aims to provide students with a comprehensive understanding of the social structure, transformations, and changes within Indian society. The course explores key social movements and population dynamics that have shaped contemporary India.

**Course Outcome:** After completion of this course, student will be able to:

1. Social Class and Structure: Students will understand the different social classes in India and how they are organized, including rural, industrial, and middle-class structures.
2. Students will learn about the profound changes in rural and agrarian India, including the transformative effects of the Green and Industrial Revolutions, and the process of urbanization.
3. Social Change: Students will gain insights into the meaning and theories of social change, including how and why societies change over time.
4. Students will explore the major social movements in India, such as those led by peasants, women, and environmentalists, and gain a deep understanding of their significant impact on society.
5. Population Dynamics: Students will understand the factors influencing population growth and composition in India and explore emerging issues like aging, sex ratios, and health.

| Unit | Topic | Key Learning |
|---|---|---|
| I | Social Class and Structure | Rural and Agrarian Structure<br>Industrial Class Structure<br>Middle-Class Structure |
| II | Rural and Agrarian Transformation | Green Revolution<br>Industrial Revolution<br>Urbanisation |
| III | Social Change | Meaning, Feature<br>Social Mobility and Change<br>Theory of Social Change |
| IV | Population Dynamics | Population Size, Growth, Composition and Distribution<br>Components of Population Growth: Birth, Death and Migration<br>Emerging Issues: Ageing, Sex Ratios, Child and Infant Morality and Reproductive Health |

**Readings:**


1. Desai, A. R. (2002). Rural Sociology in India. Mumbai: Popular Prakashan.
2. Breman, J. (1999). The Laboring Poor in India: Patterns of Exploitation, Subordination, and Exclusion. Oxford: Oxford University Press.
3. Kuppuswamy, B. (2010). Social Change in India. New Delhi: Vikas Publishing House.
4. Oommen, T. K. (1970). The Middle Classes in India: A Sociological Perspective. Sociological Bulletin, 19(2), 93-111.
5. Sivaramakrishnan, K. (1995). Situating the Subaltern: History and Anthropology in the Subaltern Studies Project. Journal of Historical Sociology, 8(4), 395-429.
6. Frankel, F. R. (1971). India's Green Revolution: Economic Gains and Political Costs. Princeton: Princeton University Press.
7. Moore, B. (1966). Social Origins of Dictatorship and Democracy: Lord and Peasant in the Making of the Modern World. Boston: Beacon Press.
8. Rao, M. S. A. (1974). Urban Sociology in India. New Delhi: Orient Longman.

9. Shiva, V. (1991). The Violence of the Green Revolution: Third World Agriculture, Ecology, and Politics. London: Zed Books.
10. Hobsbawm, E. J. (1968). Industry and Empire: The Birth of the Industrial Revolution. New York: Pantheon Books.
11. Srinivas, M. N. (1966). Social Change in Modern India. Berkeley: University of California Press.
12. Tilly, C. (1978). From Mobilization to Revolution. Reading, MA: Addison-Wesley.
13. Smelser, N. J. (1963). Theory of Collective Behavior. New York: Free Press.
14. Parsons, T. (1951). The Social System. London: Routledge.
15. Eisenstadt, S. N. (1973). Tradition, Change, and Modernity. New York: John Wiley & Sons.
16. Shah, G. (2004). Social Movements in India: A Review of Literature. New Delhi: Sage Publications.
17. Omvedt, G. (1993). Reinventing Revolution: New Social Movements and the Socialist Tradition in India. New York: M. E. Sharpe.
18. Guha, R. (1989). The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya. Berkeley: University of California Press.
19. Omvedt, G. (1980). Peasants, Dalits and Women: Democracy and India's New Social Movements. Journal of Contemporary Asia, 10(4), 473-488.
20. Shiva, V. (1988). Staying Alive: Women, Ecology, and Development. London: Zed Books.
21. Bose, A. (2001). Population of India: 2001 Census Results and Methodology. New Delhi: B.R. Publishing Corporation.
22. Visaria, P., & Visaria, L. (1983). Population Transition in India. New Delhi: B.R. Publishing Corporation.
23. Dandekar, K. (1996). The Elderly in India. New Delhi: Sage Publications.
24. Dyson, T., & Moore, M. (1983). On Kinship Structure, Female Autonomy, and Demographic Behavior in India. Population and Development Review, 9(1), 35-60.
25. Sen, A. (1990). More Than 100 Million Women Are Missing. The New York Review of Books, 37(20), 61-66.

**SUBJECT :English Language andBusiness Communication**
**SUBJECT CODE: 24UENG01**

**Objective:**

To train students to enhance their skills in written as well as oral communication through practical conduct of this course. This course will help students in understanding the principles and techniques ofbusiness communication.

**Learning Outcomes:** After completing this course, the learns will be able to

1. Students would be able to understand the nature, structure, types and process of various dimensions of communication and apply them in communication.
2. Students would be able to make effective presentations in various business/professional situations incorporating the ethics of good negotiations and assertive behavior.
3. Students would develop competency to understand and perform the diversity of the globalized multicultural world.
4. Students would be able to draft various types of documents used inside the organization for various types of communication.
5. Students would develop interview skills and competency incorporating the use of different social media platforms for networking.

| Units | Topics |
|---|---|
| **I Basics of Communication** | Meaning, Process and Types of Communication; Principles of Effective Communication; Process and types of listening, deterrents to listening process, essentials of good listening. |
| **II Presentation Skills** | Prerequisites of effective presentation, format of Presentation.<br><br>Negotiations-types, structures and basics of negotiations; Assertive behavior. |
| **III Multicultural World and Communication** | Business Communication in a globalized and multicultural world; understanding cultural diversity and developing cultural competency and inter-cultural business communication skills; Barriers to cross-cultural communication and strategies to overcome them. |
| **IV Written Communication** | Mechanics of writing, report writing, agenda and minutes; business correspondence – business letter format, style of letter arrangement, types of letters, electronic mail; Resume Writing |
| **V Communication in Practice** | Preparing for interviews- types of interviews, process of interview and group discussion; effective ways of performing well in interviews; Social media and Networking, Social media profiles, Editing and Posting onsocial media; |

**Recommended Readings:**


- Bovee, C., & Thill, J.V., and Raina, R.L. *Business Communication Today*. New York: Pearson, 2016.
- Lata, Pushp, and Sanjay Kumar. *Communication Skills*. 2nd ed. New Delhi: OUP, 2019.
- Lehman, C. M., Dufrene D. D., and Sinha, M. *BCOM: The South Asian Perspective on Business Communication*. New Delhi: Cengage Learning, 2016.
- Monippally, Matthukutty, M. *Business Communication: From Principles to Practice*. New Delhi: McGraw Hill Pub., 2018.
- Mukerjee, H. S. *Business Communication: Connecting at Workplace*. New-Delhi: Oxford University Press, 2012.
- Murphy, H. A., Hildebrandt, H.W., and Thomas, J.P. *Effective Business Communication*. Boston: McGraw-Hill Companies, 1997.
- Post, Emily. *The Etiquette Advantage in Business*. New York: Collins, 2005.
- Ramesh, Gopalaswamy, and Mahadevan Ramesh. *The Ace of Soft Skills: Attitude, Communication and Etiquette for Success*. Noida: Pearson, 2019.
- Sandra, M. O. *Handbook of Corporate Communication and Strategic Public Relations: Pure and Applied*. New Delhi: Routledge, 2004.
- Sinha, K. K. *Taxmann's Business Communication*.4th Revised ed. New Delhi: Taxmann's Pub., 2018.
- Taylor, Grant. *English Conversation Practice*. Indian ed. Chennai: McGraw Hill Education Pvt. Ltd., 2017.

**SUBJECT: English Language and Business Communication Lab**
**SUBJECT CODE: 24UENG02**

**Objective:** This course is designed to strengthen the communication abilities of the learners by providing them hands-on practice.

**Learning Outcomes:** After completing this course, the learns will be able to

1) Demonstrate knowledge and understanding of a range of professional or public communication situations.
2) Perform effectively in diverse professional and public communication situations like interviews and negotiations, drafting emails and resume etc.

**Details**

1) Situational Conversations
2) Listening Skills
3) Resume Writing
4) Mock Interviews
5) Group Discussion
6) Presentation Skills
7) Negotiation Skills
8) Email Writing
9) Public Speaking
10) Extempore Speech

**Note: The teacher should play the role of the facilitator and allow the learners maximum time to practice these activities. The focus should be primarily on helping the learners overcome the LSWR barrier and gradually move towards honing these skills to enable the learners use them in professional communication situations.**

**SUBJECT: Yoga and Health Skills –II**
**SUBJECT CODE: 24UYHS01**

**Objective**: Students will get information about the origin, history and development of Yoga along with different streams of yoga, literature and meditation.

**Learning Outcome:** After the completion of the course, the learners will be able to

1. To make aware of the definition, history and nature of yoga.
2. Telling information about different school of yoga.
3. Giving information about cleansing technique and yogic diet.
4. Explaining the importance of health.
5. Yogic management of various diseases and the utility of meditation.

| Unit | Statement |
|---|---|
| 1 | **Introduction to Yoga**: Meaning and Definition of Yoga, Aim and Objectives of Yoga, Misconceptions of Yoga; Brief knowledge about Streams of Yoga-Ashtang and HathaYoga. Yogic Prayer Mantra. Importance of Yoga in modern era. |
| 2 | **Yoga practices**: Raja Yoga (AshtangaYoga), GyanYoga, Bhakti Yoga, Karma Yoga, Hatha Yoga. |
| 3 | **Introduction to cleansing technique**: Meaning, Definition, Objectives and Classification. Yogic diet: Diet, Yogic Diet, Anti-diet, Balanced diet. |
| 4 | **Health**: Meaning, Definition, aim and objectives, Dincharya (Daily regimen): Meaning, definition and sequential elements, Application of Dincharya, Ritucharya (Seasonal Regimen): Meaning, Definition, Types with their salient features, Season wise Does and Don'ts. |
| 5 | **Yogic management in health problems**: cervical, back pain, diabetes and stress.<br>**Meditation**: Meaning, types, importance, general instructions and suggestions for meditation, physical, mental and spiritual effects of meditation. |

**TEXT BOOKS**


1. Yoga & yogic chikitsa - Singh Prof. Ramharsh ,Chaukhamba Sanskrit pratishthan, Edition 2011
2. Swami Vivekananda: Jnana Yoga, Bhakti Yoga, Karma Yoga, Raja Yoga, Advaita Ashrama, Calcutta, 2002.
3. Prof. Ramharsh Singh -SwashthavrittaVigyan, Chaukhambha Sanskrit Prakashan, Varanasi, 1998.
4. Sriram Sharma Acharya- JivemSharadahShatam, AkhandJyoti Mathura 1998.
5. Prof. Ramharsh Singh-Yogewam Yogic Chitksha, Chaukhambha Sanskrit Prakashan, Varanasi, 1998.
6. SwasthaVrittaVigyanewam Yogic Chiktsha- Dr. RakeshGiri, SikhshaBharti, Uttrakhand.


**References Books**


1. Swami Kuvalyananda : Asana, Kaivalyadhama, Lonavla, 1993
2. Swami Satyananda Saraswati: Asana, Pranayama, Bandha, Mudra, Bihar School of Yoga, Munger, 2006
3. Basavaraddi, I.V. & others: YOGASANA: A Comprehensive description about Yogasana, MDNIY, New Delhi, 2011.
4. Basavaraddi, I.V. & others: Yogic Sukshma Evam Sthula Vyayama, MDNIY, New Delhi, 2011.